INTERNATIONAL ADVISORY BOARD ON POLLUTION CONTROL - ST. CROIX RIVER

FIFTY-THIRD PROGRESS REPORT TO THE INTERNATIONAL JOINT COMMISSION, 1995

ST. CROIX RIVER MAINE AND NEW BRUNSWICK

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1.0 SUMMARY

All the inspected Maine and New Brunswick sewage treatment plants which discharge to the St. Croix River met state and provincial regulations. This included the effluent discharge of the Georgia Pacific Corporation pulp and paper mill at Woodland where upgrading of processes and waste treatment facilities continues to improve effluent quality.

Lower coliform levels were found at most Oak Bay sites than previous years. These results suggest the opportunity for the re-opening some clam beds for direct harvesting. The Board is encouraged by this apparent improvement in water quality in the estuary.

Water quality in the River appears to be meeting IJC requirements for the fourteenth year in a row. The Pollution Advisory Board, however, is concerned over its future ability to adequately assess the water quality due to cuts to government monitoring and analytical capabilities in both Canada and the US.

Salmon returns to the St. Croix River continue to remain very low, as they have for the past three or four years, despite a stocking program. This condition persists in most rivers throughout the northwest Atlantic.

The Board is concerned over the unilateral nature of legislation passed by the State of Maine which prohibits the migration of alewives past the dams at Woodland and Grand Falls. This law limits the effectiveness of fisheries management agencies in managing anadromous species and could have broader ecosystem impacts in the basin.

One of the most valuable outcomes of the Review of Orders has been a much closer association with all of the stakeholders in the Basin. The Board will continue to support public meetings and stakeholder interaction as part of its gathering of information and advice.

2.0 STATUS OF POLLUTION ABATEMENT

2.1 Maine

The Maine Department of Environmental Protection (DEP) reported that all waste treatment plants which were inspected met State requirements. DEP officials had discontinued visiting some of the plants with good operating records, but operators have requested that such visits be reinstated as a show of interest and support. The G.P. waste treatment system has been stabilized and continues to undergo improvements. It is operating effectively as indicated by routine whole effluent toxicity testing.

Georgia-Pacific Corporation's (G. P.) mill at Woodland continue to meet the discharge requirements of its State licence. In November the company announced a major modernization project that will include an extensive environmental upgrade. The improvements will include process changes which reduce water consumption by 25% with a subsequent reduction of water withdrawal and waste flow to the St. Croix River. They are also installing cooling towers which will reduce the temperature of waste streams to the River. One tower was completed in December, 1995, and is operational; the second tower is under construction. Other improvements will also result in the reduction of solid waste disposal and air emissions. These improvements will be added to the large reductions in effluent BOD and colour which have recently been achieved.

G. P. is still in the midst of its re-licensing activities under FERC, and has asked that a number of its upstream dams be exempt from the licensing process because they do not generate power. Precedents

exist for the granting of such exclusions.

2.2 New Brunswick

A New Brunswick annual report on municipal waste treatment and discharge is nearing completion and will soon be released. NB has classified its 130 municipal and 200 private treatment plants; Class 1 and Class 2, according to size and the frequency of required monitoring. This is a new initiative which will provide municipalities, residents and other stakeholders access to summary information on the design and operation of treatment plants throughout New Brunswick. Sample pages from the draft report, describing the major plants on the St. Croix River, are included as appendix A. The Class 2 McAdam plant has operated effectively throughout the year. The older (1967) Milltown plant was bypassed in 1995 on a few occasions because of equipment problems. The St. Stephen plant, which receives shock loading at times from local industry, is going to be expanded and will incorporate a new solar aquatics treatment system. The operation of the plant at St. Andrews caused occasional problems during the past year. Despite shortfalls, all NB sewage treatment plants discharging to the St. Croix River have continued to meet the NB standards. The announcement of plans for more frequent monitoring of treatment plants by the province was greeted positively by the Board.

2.3 Coliform Pollution

The problem of bacterial contamination of shellfish growing areas in the estuary of the St. Croix River continues to be a primary issue of the Board. Shellfish harvesting areas in the St. Croix estuary are still closed for direct harvesting. In 1994 and 1995, sanitary surveys have been conducted in Oak Bay, NB and adjacent areas to compliment 1993 sanitary surveys on the Maine side of the estuary. In addition, coliform sampling of water overlying Oak Bay shellfish growing areas, and at selected tributaries to the estuary, was conducted in 1995 by the St. Croix Estuary Project, one of Environment Canada's Atlantic Coastal Action Plan (ACAP) projects in the Atlantic Region. This sampling (report in press) found lower coliform levels at most Oak Bay sites than did studies from previous years, with these results suggesting the opportunity for the re-opening of some clam beds for direct harvesting. Currently any shellfish gathered in this area must be depurated (cleansed at special depuration plants) before marketing.

The Board is encouraged by this apparent improvement in water quality in the estuary which is attributable to the combined work of government agencies such as NB Environment, NB Health, Department of Fisheries and Oceans, Environment Canada; community interests including the International Waterway Commission and the St. Croix Estuary Project (SCEP), and land owners on both sides of the St. Croix River. Reports on the 1995 sanitary, tributary, overlying water quality and waste treatment plants are expected to be available soon.

Volunteer water monitoring continues to be coordinated by the St. Croix International Waterway Commission, the St. Croix Estuary Project and others on all parts of the watershed. These activities obtain background water quality data and serve as an early warning system for water quality problems.

One area of concern identified in 1995 was Tan House Brook, a small tributary flowing into the St. Croix River at St. Stephen, NB. This stream is the source of unusual bacterial contamination and hydrocarbons and is under study by the NB Department of the Environment

3.0 SURVEILLANCE AND MONITORING

3.1 Milltown Monitoring Station

For the first time in 14 years the Board is unable to state conclusively that the water quality objectives for pH (6.0 - 8.5) and dissolved oxygen (greater than or equal to 5.0 mg/L) in the St. Croix River were met in 1995. Sources for water quality data and analysis, usually available to the Board to make those conclusions, were not readily available in 1995. The USGS water monitor at Milltown had to be replaced and a new shelter installed. The IJC funds usually used to maintain and operate the monitor were diverted to purchasing and installing the new monitor in May 1995. The Board was unable to secure the funds ($ 12,000 to $15,000) needed for USGS to operate the station. The Board has recently learned that the USGS did operate the station at Milltown on a trial basis during summer months, from the end of May to October 5, 1995. Uncorrected data are available for that period and have provided the Board with preliminary information that the dissolved oxygen water quality objective was met during the period of record. Continued funding of the USGS monitor at the current level will be essential for the operation and maintenance of the new monitor from May to September, 1996.

The collection of monthly grab samples at the Milltown bridge, previously carried out by staff from Environment Canada, was continued by the International St. Croix Waterway Commission staff.

3.2 Water Quality Issues

The Pollution Advisory Board is concerned over its future ability to adequately assess the water quality situation on the St. Croix River. Cuts to government spending in both Canada and the US have resulted in a closure or limited operation of some of the water monitoring stations on the St. Croix River. The IJC has cut funding to the USGS which has resulted in removal of some water discharge and water quality monitoring. Also, the recent Program Review within EC has resulted in reduction of efforts in water quality assessment in the St. Croix Basin. These changes may result in a reduction of the ability of the Board to properly evaluate water flows and quality and might jeopardize their ability to carry out its Directives. The Boards want to establish their minimum needs for water monitoring and develop a strategy to ensure that water quantity and quality data continue to be available.

At this time, the agencies are using innovative means and cost recovery to try to keep key stations open. For example, Environment Canada has made an agreement with Georgia Pacific Corporation for them to fund monitoring at stations where the data are of value to the company. Both Boards feel there is a need to establish their minimum requirements for water monitoring and to develop a strategy to ensure that the key stations continue to operate and the needed data continue to be available. However, data analysis and water quality reporting are no longer available to the Pollution Advisory Board to the extent that they were last year.

4.0 FISHERIES RESTORATION

The numbers of salmon returning to the St. Croix River in 1995 was low and shows a continuation of the poor returns experienced over the past four years. Reasons for the decline are still unknown, but numbers continues to be low in most of the rivers along the Eastern Seaboard. In 1994 a total of 181 salmon were counted at the Milltown fishway. In 1995 a total of 60 returning salmon passed through the Milltown fishway. Sixteen of these were taken temporarily as broodstock for the restoration program on the River. Returns were composed of wild salmon, hatchery returns and aquaculture escapees. A summary of the 1995 Atlantic Salmon monitoring and stocking program, which was coordinated by the St. Croix International Waterway Commission, is shown below:

Type of Salmon	Age	Numbers 1995	Numbers 1994
Wild salmon	one sea winter multi sea winters	7 14	24 19
Hatchery returns	one sea winter multi sea winters	7 19	23 18
Aquaculture escapees	one sea winter multi sea witners	7 6	97 0
Total		60	181

Table 1: Salmon returns for the past two years.

Salmon stocking on the St. Croix River in 1996 will include the introduction of 16,000 smolts and 38,000 par.

Also in 1995, physical surveys were completed on an additional 8 km of the upper St. Croix River to evaluate further salmon habitat availability. Preliminary results of the 1994 physical survey on another 22 km of the upper River are being examined by the Board.

Little change has occurred in the legal case aimed at having the Atlantic Salmon declared an"endangered species" in the United States, but the Board drew this matter to the attention of the Commission in a letter dated 28 November, 1995. Such legislation would severely restrict efforts at water management and salmon enhancement on the International St. Croix River by bringing controls over handling, stocking, and other management prerogatives currently being carried out.

Also reported to the Commission in the letter of 28 November, 1995, is the case concerning the legislation in the State of Maine prohibiting any efforts to rehabilitate or enhance the alewife population on the St. Croix River, specifically by blocking of the spawning migration of alewives at the Woodland and Grand Falls dams on the lower part of the system. As noted in that letter, this initiative has been advanced by interests in the bass fishery which want to protect the bass populations in the upper lakes from competition with the alewives. The need for this protection is not well substantiated from a scientific point of view. The Maine law was passed without proper consultation with the Province of NB or the Canadian Department of Fisheries and Oceans. The alewife prohibition is also in opposition with the views of fisheries and wildlife agencies in the US.

The Board is concerned that this law is in conflict with the management plan for the restoration of anadromous species in the River and may, in fact, inhibit the ability of the Pollution Advisory Board to fulfil its Directives in this regard. Of further concern is the probable impacts to both the River and estuarine ecosystems due to the removal of an important food source for adult bass, other forage fish species and fish-eating birds such as eagles, ospreys and herons as well as fish-eating mammals. A full consideration of this situation by the Commission has been requested by the Board.

In 1995, a total of 265,170 returning alewives were monitored passing through the Milltown fishway and an additional 8,000 were taken in a commercial fishery below this point. This spawning escapement and return is down from the number recorded in 1994 (334,753) but is consistent with trends for salmon and alewives in other rivers in the region.

The Board continues to work closely with the inter-agency St. Croix Fisheries Steering Committee, the St. Croix International Waterway Commission and the St. Croix Estuary Project concerning the various fisheries on the watershed. There are still many aspects of the fisheries that the Board feel have not been fully examined or that are not fully understood. Various user interests and agencies on both sides of the system have been working with the St. Croix International Waterway Commission on a three-year recreational fisheries assessment and improvement program on the system, including studies on fish habitat, bass populations, salmon restoration and shad potential. Annual reports on this program, which concludes in early 1996, are available.

A new eel fishery, aimed at juvenile eels (elvers), is netting large numbers along the Coast of Maine and in the estuary. This product has a high overseas market value (up to $400.00/lb for elvers). The impact of this new fishery on the adult eel fishery in the estuary and the upper lakes (4500 lbs adult eels harvested in the upper basin in 1995) is uncertain. The Board also has concerns over the removal of an important food supply for other fish species, birds and other wildlife with possible long-term ecosystem impacts. Fisheries managers in both Canada and the US are developing management plans for the American eel that are aimed at addressing both the potential conflicts in the fishery and the conservation of this valuable resource.

5.0 OTHER ELEMENTS

5.1 Review of Orders of Approval

The Pollution Advisory Board is involved with the Board of Control in the joint review of the IJC Orders of Approval for the St. Croix River. The eight members of the joint Boards form a Steering Committee for the Review, and both Boards have supplied representatives to the Working Group. In

addition, the Boards have established a Stakeholders Group, involving the public and interested citizens, industry and individuals.

One of the most valuable outcomes of this Review to the Pollution Advisory Board is a much closer association with all of the stakeholders in the Basin. The public meetings and the work of the Stakeholder Group and the Working Group have established lines of communication and a better understanding of competing needs and areas of cooperation that would not have been possible otherwise. Continued support for the Stakeholder Committee as an advisory body to both Boards would be particularly valuable to the work of the IJC in the St. Croix Basin.

The Boards are nearly ready to present their advice to the Commissioners. This will be provided in a report to the Commission expected to be completed by October, 1996. A full review of the draft report by citizens in the Basin, and an opportunity to discuss it at a public meeting, are important and therefore need to be accommodated during the coming summer. Preliminary findings, and the result of initial review by the Stakeholder Group, will be discussed at the semi-annual meeting of the IJC in April, 1996. The principle findings of the Review lead us to believe that working with Georgia Pacific in honing "soft" controls, which are already effective in satisfying most stakeholder requirements, would be a preferred solution to changing the current Orders. This situation would provide flexibility for operating the system even in very dry years.

5.2 The International Waterway Commission

One of the chief advisory bodies to the Pollution Advisory Board is the St. Croix International Waterway Commission (IWC), which was established in 1989 by Maine and New Brunswick as the result of an agreement to work together to protect and manage the common heritage and resources of the St. Croix River and to encourage appropriate regional growth. The Board has a strong cooperative relationship with the IWC and particularly values its informed advice on water quality, fisheries management issues, land use changes and public opinions and attitudes in the Basin. For example, the St. Croix Water Watch project of the IWC, a cooperative water quality and education program conducted partly by volunteers and supported by industry and environmental agencies in Canada and the US, continues to provided data for the watershed. This baseline data has been useful in assessing environmental quality trends and examining options for integrated watershed management. The Board may come to depend even more for such information from the IWC and others as government agencies withdraw funding and support for environmental monitoring and water quality analysis. There is concern for the continuing operation of the IWC as government funding becomes more tenuous.

5.3 Saint Croix Estuary Project

An important activity in the St. Croix Estuary, which should help in the restoration of water quality and enhance the ecological understanding of the area, is the St. Croix Estuary Project. The St. Croix Estuary Project is a cooperative effort of community, user and planning interests funded in part under a 5 year (1993 - 1997) agreement with Environment Canada's Atlantic Coastal Action Plan. This organization focuses on the international St. Croix River estuary and nearby Chamcook and Bocabec coastal areas of

New Brunswick and is developing a comprehensive environmental management plan for these waters. The project will also produce a profile of the environmental and socioeconomic nature of the area. Fisheries concerns are of primary interest, but also of interest will be the restoration and maintenance of water quality.

5.4 Public Meetings

Public meetings have been held in the Basin each year since 1992 and have been particularly valuable in alerting the Boards to both emerging issues and long standing problems. In 1995 meeting were held at Vanceboro and St. Stephen on August 30 and 31. Typical questions raised by attendees covered topics such as the damage done to biota when the lakes are severely drawn down in late summer, ownership of the water in the St. Croix Waterway, IJC contacts to alert in the case of pollution or improper use of the waterway, how often are the lakes in the system inspected and by whom, increasing problems with foam in the estuary and its cause, the disappearance of certain wildlife species in the estuary and others. These forums allow the Boards an opportunity to address the questions and comments at the time or to take them on advisement for later investigation. The intention of the Boards is to continue these meetings and to encourage the Commissioners to also attend whenever it is convenient.

5.5 Land Use Water Quality Concerns

There are concerns over the potential effects of growing development and land use practices along the River and around the storage lakes. Growing demands for water-side cottage lots places a new potential stress on the system from run off, sewage and water use.

In August 1995, the Province of New Brunswick adopted a shoreland zoning regulation for the St. Croix boundary waters that established development setbacks and vegetation buffers along the lake, river and esturial shorelines of the St. Croix in all unincorporated areas. This is model legislation for Canada and complements existing development controls along most of the Maine side of the St. Croix. It serves the dual roll of maintaining rural character and protecting water quality from nonpoint source pollution. Along the upper River and Specnic Lake portions of the system, more significant setbacks and some land or easement purchases have been used by Maine and New Brunswick to maintain a significant forested water corridor.

The growing number of environmentally concerned users, and a heightened awareness of the value of the water resource for all users, has changed the philosophy of water use in both Canada and the United States. Pressure for water of high quality for all uses is growing. The New Brunswick Basic Planning Legislation tightens control over water-side development in this area and will help to achieve the high water quality standards required by users of the waterway.

5.6 Mercury Deposition

The Pollution Advisory Board continues to be interested in the issue of mercury deposition in the St.

Croix Basin resulting from transboundary long range atmospheric transport of air pollutants from sources on the Eastern Seaboard. Health advisories were issued by the State of Maine and the provinces of New Brunswick and Nova Scotia in the summer of 1994. International studies of mercury deposition in the region continue.

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Maintained by: James Houston

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